MULTIMEDIA UNIVERSITY

STUDENT ID NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 2, 2018/2019

DPA5018 – PROGRAMMING FOR BUSINESS APPLICATIONS

(FCI students)

13 MARCH 2019
9:00 am – 11:00 am
(2 Hours)

INSTRUCTIONS TO STUDENTS

1. This question paper consists of **13** pages.
2. There are 3 sections, attempt **ALL** questions.
3. Write your answers in the Answer Booklet and OMR sheet provided.

Section A: Multiple Choice Questions (Total: 30 Marks)
Instruction: Choose the best answer. Write your answers in OMR sheet provided.

1. Determines whether the following statements below have any error? If **YES**, determine what the error is.

```
Dim num1, num2, total As Integer
num1 = -300000000
num2 = 10000
total = num1 * num2
```

A. Syntax error
B. Runtime error
C. Logic error
D. No error

2. The value for _____ variable cannot be changed once declared in class-level scope.
A. constants
B. data type
C. event
D. Boolean

3. _____ provides a set of choices to the user.
A. Button
B. Text box
C. Radio button
D. Label

4. Which of the following statement is **CORRECT** to change the color of font of text box named ***txtID*** into green?
A. `txtID.FontColor = green`
B. `FontColor = txtID. green`
C. `txtID.ForeColor = Color.green`
D. `txtID.FontColor = Color. green`

5. Given a statement ***txtBox.Click***, the *Click* in the statement denotes:
A. Event
B. Function
C. Action
D. Script

Continued.....

6. _____ is a diagrammatic representation that illustrates the logical steps to carry out a task and shows how the steps relate to each other.

   A. Flowchart
   B. Pseudocode
   C. Hierarchy Chart
   D. Data Flow Diagram

7. When _____ property of a text box is set to 'true', users can still scroll and highlight text in the text box without allowing changes.

   A. Locked
   B. ReadOnly
   C. Visible
   D. Text

8. Assume that you have a text box control named ***txtBox***. Which of the following is the correct event handler that will be executed when a focus of the text box is lost?

   A. `txtBox.Lost`
   B. `txtBox.Leave`
   C. `txtBox.LostFocus`
   D. `txtBox.Text`

9. _____ is a set of instruction that directs a computer to perform specific operations.

   A. Hardware
   B. Software
   C. Pseudocode
   D. Algorithm

10. The _____ structure is the construct where statements can be executed or skipped depending on whether a condition evaluates to true or false.

    A. sequence
    B. skipped
    C. selection
    D. repetition

11. Which of the following are **TRUE** about forms and controls in Visual Basic?

    I. They are graphical objects.
    II. Buttons can be created with drag and drop method.
    III. They are pre-built.
    IV. Controls cannot be removed once placed into a form.

    A. I and II
    C. I, II, and IV

Continued.....

B. I, II, and III

D. All of the above

12. A(n) _____ property of a control determines the order in which controls receive the focus during tabbing.

A. tabIndex

B. tabStop

C. indexNum

D. TextAlign

13. What will be displayed by the textbox ***txtDisplay*** after the execution of the statements below?

```
Dim num1 As Double = 5.2
Dim num2 As Double = 4.0
num2 = CInt(num1 * 2)
txtDisplay.Text = num2
```

A. 4.0

B. 8

C. 10.4

D. 10

14. Given variable declarations as below, which of the conditional statements returns **TRUE**?

```
Dim num1 As Double = 5.2
Dim num2 As Double = 4.0
Dim bool As Boolean = False
```

A. `(num1 + num2 > 10) Or (num1 > 10)`

B. `(num1 + num2 > 10) And (num1 > 10)`

C. `(num1 + num2 > 10) And (Not bool)`

D. `(num1 + num2 > 10) Or (Not bool)`

15. What happens when a parameter in a procedure is declared ***ByRef***?

A. A value of the argument is passed to the procedure.

B. The same memory location as the argument is passed to the procedure.

C. Only arguments of numeric data types are allowed.

Continued.....

D. All variables are reset to NULL.

16. Which of the following are **TRUE** about loop statements?

I. Used to repeat a sequence of statements a number of times.

II. Repeats a sequence of statements either as long as or until a certain condition is true.

III. For each iteration, a loop counter variable can only be increased by 1.

IV. A "`For`" loop structure must be paired with an "`End For`".

A. I and II
B. I, II, and III
C. I, II, and IV
D. All of the above

17. Given statements as below, what will be the value of *`data(5)`*?

```
Dim data(), str As String
str = "The quick brown fox jumps over the lazy dog"
data = str.Split(" ")
```

A. jumps
B. over
C. The quick brown fox jumps
D. jumps over the lazy dog

18. Which of the following is a valid statement to display a dialog box that prompts the user to open a file?

A. `openFileDialog1.Display()`
B. `openFileDialog1.ShowDialog()`
C. `openFileDialog1.Show()`
D. `openFileDialog1.Open()`

19. _____ uses English-like phases with some Visual Basic terms to outline the task.

A. Flow chart
B. Hierarchy chart
C. Pseudocode
D. Software

Continued.....

20. _____ is a step-by-step series of instructions or procedures for solving a problem.

A. Software
B. Application
C. Project
D. Algorithm

21. A variable declared inside an `If` or `Select Case` block has _____ scope. The variable cannot be referred to outside of the block.

A. block-level
B. global-level
C. local-level
D. event-level

22. Which of the following is **NOT** a type of procedure in Visual Basic?

A. Event
B. Function
C. Sub
D. Click

23. What will be the value of variable `result` after the execution of the statements below?

```
Dim result as Integer = 0
For i = 0 To 10 Step 2
      result = result + i
Next
```

A. 0
B. 10
C. 30
D. 55

24. Which of the following are principles of designing a database?

I. Data should usually be stored in their smallest parts.
II. Avoid redundancy.
III. Avoid tables with intentionally blank entries.
IV. Avoid fields whose values can be calculated from existing fields.

A. I and II
B. I, II, and III
C. I, II, and IV
D. All of the above

Continued.....

25. Which of the following is **NOT** a text file mode?

A. OpenText
B. CreateText
C. CombineText
D. AppendText

26. _____ is a block of code that is executed in response to an event.

A. Function procedure
B. Sub procedure
C. Property procedure
D. All of the above

27. How many values can a function procedure returns?

A. 0
B. 1
C. 2
D. As many values

28. The methodology where code is broken into small, logical procedures is called:

A. Event-driven programming
B. Functional programming
C. Modular programming
D. Procedural programming

29. Which of the following is **FALSE** about passing arrays to procedures?

A. An entire array can be passed to a Sub or Function procedure.
B. The calling statement uses the name of the array without parentheses.
C. The header of the Sub or Function procedure uses the name with an empty set of parentheses.
D. None of the above.

30. Which property of OpenFileDialog control specifies the choices in the "Files of type" dropdown box?

A. FileName
B. FilterIndex
C. FileType
D. Filter

Continued.....

Section B: True/False Questions (Total: 10 Marks)

Instruction: Answer A for TRUE and B for FALSE statements. Write your answers in the OMR sheet provided.

31. Incorrect use of punctuation in a statement is a type of overflow error.

32. Variables declared outside an event procedure are said to have class-level scope and are available to every event procedure.

33. When a parameter in a procedure is declared `ByVal`, a copy of the argument is sent to the procedure.

34. An expression that evaluates to either true or false is said to have Boolean data type.

35. `Case Is>=15` is a correct Select Case structure.

36. Sub Procedures that return a single value with ByRef can be replaced with a Function procedure.

37. `For i As Integer = m To n Step s`, the loop will not be executed at all if *m* is greater than *n* and *s* is positive, or if *m* is less than *n* and *s* is positive.

38. *For* and *Next* statements must be paired to avoid the automatic syntax checker complained with a wavy blue underline and a message such as *"A 'For' must be paired with a 'Next'."*

39. If `Step s` is appended to the For statement, the value of s will be added to the counter variable after each pass.

Continued.....

Section C: Structured Questions (Total: 60 Marks)
Instruction: Answer ALL questions in the Answer Booklet provided.

QUESTION 1 [20 Marks]

a) The following is a volume calculation program for cylinder and cone. It takes radius, height and type of the shape as input as shown in Figure 1, then displays the total volume of selected shape in a popup message box as shown in Figure 2. Given that the equation of cylinder and cone are $V = \pi r^2 h$ and $V = \frac{1}{3}\pi r^2 h$ respectively, complete the following code and round the volume to 3 decimal places. (12 Marks)

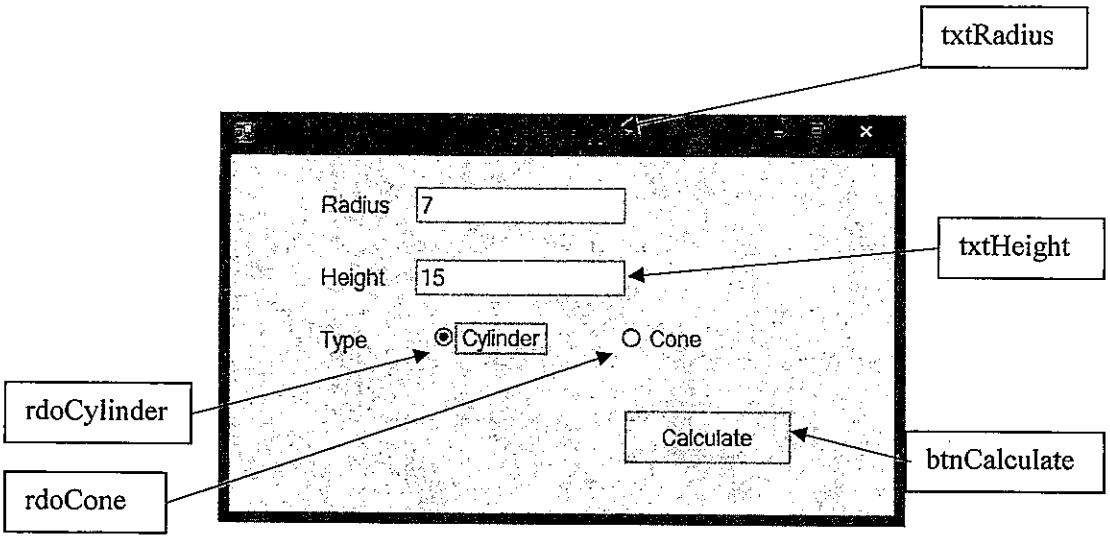


Figure 1

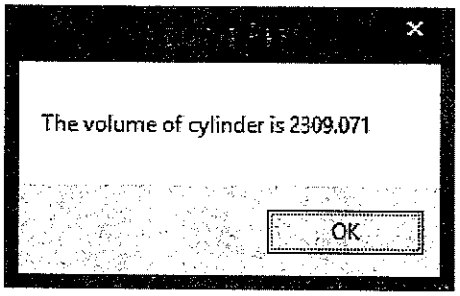


Figure 2

```
Private Sub btnCalculate_Click(...) Handles btnCalculate.Click

    Dim radius, height, volume As Double
    Dim type As String
```

Continued.....

```
...
    ...
...

End Sub
```

b) Given the sample code as below, determine the expected elements of array `allplaces` and `allplaces2`. (4 Marks)

```
Dim place1() As String = {"Woodley", "Fallcoast", "Icewater"}
Dim place2() As String = {"Aelhill", "Shadowbush", _
                          "Woodley", "Southwald", "Icewater"}

Dim allplaces() As String = place1.Concat(place2).ToArray
Dim allplaces2() As String = place1.Intersect(place2).ToArray
```

c) Complete the code below to select a text file and display its contents in a list box `lstOutput`. (4 Marks)

```
OpenFileDialog1._____(i)_____
Dim filename As String = OpenFileDialog1._____(ii)_____
lstOutput.DataSource = IO.File._____(iii)_____ (filename)
lstOutput.SelectedItem = Nothing
```

Continued.....

QUESTION 2 [20 Marks]

a) Given the sample code as below, determine the output displayed in the list box named *lstResult*. (4 Marks)

```
Dim mystring As String = "I like Programming so much."
Dim num As Double = 12
Static limit As Integer = 10

func1(mystring, num, limit)
lstResult.Items.Add(mystring)
lstResult.Items.Add(num)

func2(mystring, num)
lstResult.Items.Add(mystring)
lstResult.Items.Add(num)

Sub func1(ByVal str As String,ByRef num As Integer,_
ByVal lim As Integer)
        str = str & " It is so cool!"
        For i As Integer = 1 To lim Step 5
            num += 1
        Next

End Sub

Sub func2(ByRef str As String, ByVal num As Integer)
        str = str.Substring(7, 11)
        num = 100
End Sub
```

b) Write statements for the following program.

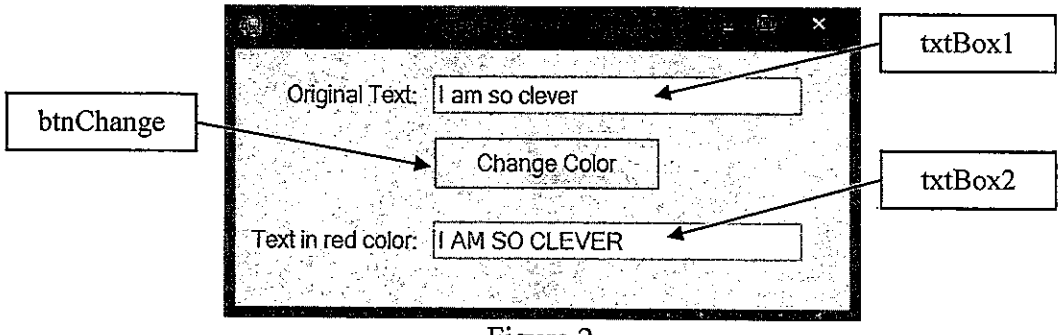


Figure 2

Continued.....

When the button `btnChange` is clicked, the text of textbox `txtBox1` is copied and displayed in textbox `txtBox2` with all letters in capital case. The text color of `txtBox2` is also changed to red. (4 Marks)

c) Figure 2 shows a program that examines whether a number entered is a positive, negative or 0 value. Complete the code by using **select case** control structure.

(4 Marks)

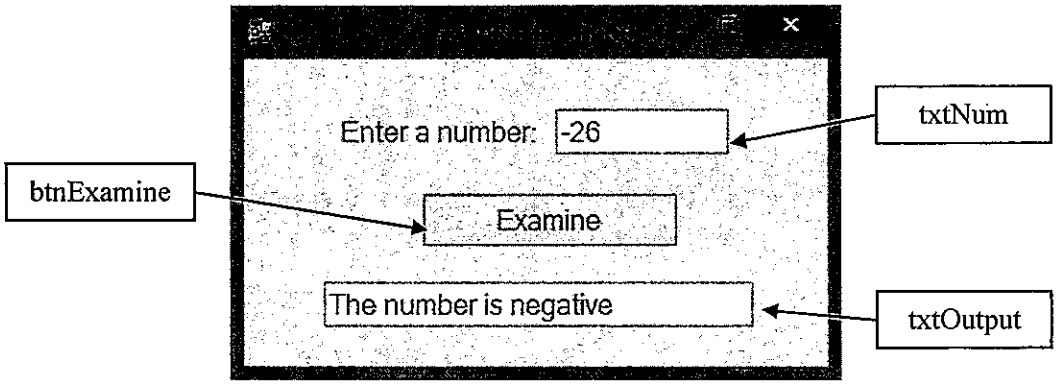


Figure 2

```
Private Sub btnExamine_Click() Handles btnExamine.Click
    ... ...
    ... ...
    ... ...
End Sub
```

d) If originally x = 0, y = 0, and z = 1, what is the value of x, y, and z after executing the following code? (3 Marks)

```
If (z < x Or y >= z And z = 1) Then
   If (z And y) Then
      y = 1
   End If
Else
   x = 1
End If
```

e) Given a database named *employee_salary* with a table *salary* as shown in Figure 1. Write a query to extract employees with salary greater than RM5000 and display their names in a list box named lstOutput. (5 Marks)

(Note: Data source name is "Employee_salaryDataSet")

Continued.....

Salary

ID	Emp_Name	Emp_Age	Emp_Salaray
1	Alan	45	8500
2	Olivia	26	2400
3	Mia	33	3800
4	Madison	61	12000
5	Michael	19	1500
6	Ethan	24	2800

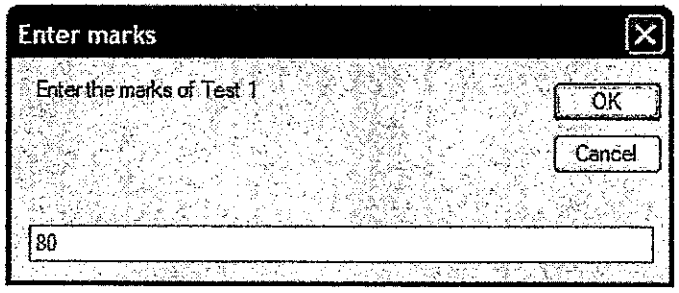
Figure 1

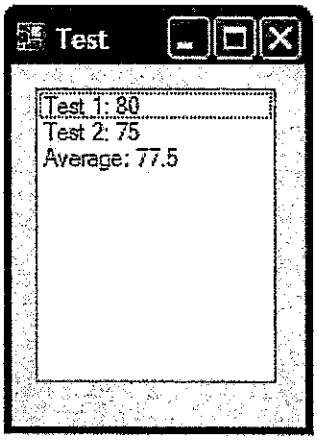
QUESTION 3 [20 Marks]

a) Create a Double array named *marks* to store test marks of a student. (2 Marks)

b) Read the marks of **TWO** tests using an input dialog box and place the marks into the array *marks*. (4 Marks)

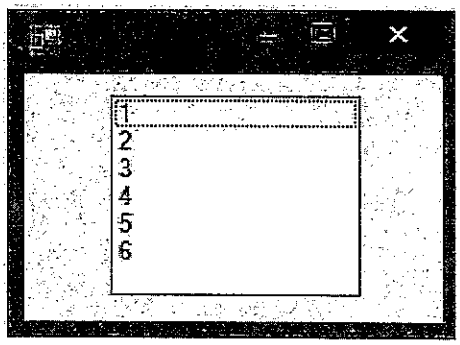
c) Then, display the marks of each test and the average marks in a list box. (2 Marks)





d) Given the following array, write code to display each element of the array in a list box. (2 Marks)

```
Dim arrNum( , ) As Double = {{1,2,3},{4,5,6}}
```



Continued.....

e) Given the following array, modify the program in *Question 3a* by performing the tasks below: (10 Marks)

```
Dim students() As String = {"Amber", "Ben", "Cathy", "Dean",
"Ethan"}
```

i. Create a two-dimensional array named *marks* of type `Double` that can store **TWO** test marks of **FIVE** students.

ii. Read the marks of the two tests for each student using an input dialog box and place the marks into the array *marks*.

iii. Then, display the student name, marks of each test and the average marks for each student in a list box in a form.

End of Page.